WHAT IS CLAIMED:

1. An intravascular stent, comprising:

a plurality of metallic cylindrical rings with a first delivery diameter and a second implanted diameter, the rings being expandable in a radial direction and aligned along a longitudinal axis of the stent; and

a polymeric coil with a first delivery diameter and a second implanted diameter, the coil being expandable in a radial direction and having an outer surface and an inner surface and being aligned along a longitudinal axis of the stent.

2. The stent of claim 1, wherein the cylindrical rings are attached to the outer surface of the polymeric coil.

3. The stent of claim 1, wherein the cylindrical rings are attached to the inner surface of the polymer coil.

4. The stent of claim 1, wherein longitudinal resistance to bending is less than a metallic stent having the same size and shape.

5. The stent of claim 1, wherein radial resistance to compression is at least equal to a metallic stent having the same size and shape.

6. The stent of claim 1, wherein the cylindrical rings and the coil are continuously coupled together in both the first delivery diameter and second implanted diameter respectively.

7. The stent of claim 1, wherein a plurality of protrusions extend radially outward of the cylindrical rings in the second implanted diameter.

8. The stent of claim 1, wherein the rings are attached to the coil with a bonding agent.

9. The stent of claim 1, wherein the rings fit within slots in the outer surface of the coil.

10. The stent of claim 1, wherein the coil radially compresses when the stent is crimped onto a catheter and radially expands when the stent is deployed from the catheter.

11. The stent of claim 1, wherein the metallic material forming the cylindrical rings is taken from the group of metals consisting of stainless steel, titanium, tantalum, nickel titanium, cobalt-chromium, gold, paladium, platinum and iradium.

12. The stent of claim 1, wherein the polymeric material forming the coil is taken from the group of polymers consisting of polyurethanes, polyetherurethanes, polyesterurethanes, silicone, thermoplastic elastomer (C-flex), polyether-amide thermoplastic elastomer (Pebax), fluoroelastomers, fluorosilicone elastomer, styrene-butadiene rubber, butadiene-styrene rubber, polyisoprene, neoprene (polychloroprene), ethylene-propylene elastomer, chlorosulfonated polyethylene

elastomer, butyl rubber, polysulfide elastomer, polyacrylate elastomer, nitrile, rubber, a family of elastomers composed of styrene, ethylene, propylene, aliphatic polycarbonate polyurethane, polymers augmented with antioxidents, polymers augmented with image enhancing materials, polymers having a proton (H+) core, polymers augmented with protons (H+), butadiene and isoprene (Kraton) and polyester thermoplastic elastomer (Hytrel).

13. The stent of claim 1, wherein the plurality of cylindrical rings have undulations comprising a plurality of peaks and valleys.

14. The stent of claim 13, wherein a plurality of cylindrical rings are bonded to the coil at points in between the peaks and valleys of the cylindrical rings.

15. The stent of claim 13, wherein the peaks and valleys of a plurality of cylindrical rings form U-shaped portions.

16. The stent of claim 13, wherein the peaks and valleys of a plurality of cylindrical rings form Y-shaped portions.

17. The stent of claim 13, wherein the peaks and valleys of a plurality of cylindrical rings form W-shaped portions.

18. The stent of claim 13, wherein the peaks of each cylindrical ring are axially aligned with the valleys of each adjacent cylindrical ring.

19. The stent of claim 13, wherein the peaks of each cylindrical ring are axially aligned with the peaks of each adjacent cylindrical ring.

20. The stent of claim 1, wherein the stent is self-expanding.

21. The stent of claim 20, wherein the material forming the cylindrical rings embodies shape memory characteristics.

22. The stent of claim 21, wherein the shape memory material is a superelastic material.

23. The stent of claim 22, wherein the superelastic material is nickel titanium.

24. The stent of claim 1, wherein the coil is loaded with a therapeutic drug.

25. The stent of claim 1, wherein the coil is coated with a bioactive coating.

26. The stent of claim 1, wherein the stent is bio-compatible.

27. The stent of claim 1, wherein the stent is non-biodegradable.

28. The stent of claim 1, wherein a material is compounded into the polymeric coil to generate a magnetic susceptibility artifact of the stent.

29. The stent of claim 1, wherein the polymeric coil includes a material therein to enhance the radiopacity of the stent.

30. The stent of claim 1, wherein the polymeric coil is translucent.

31. The stent of claim 1, wherein the cylindrical rings include a material therein to enhance the radiopacity of the stent.

32. The stent of claim 1, wherein the cylindrical rings are substantially translucent.

33. The stent of claim 1, wherein the stent may be expanded by force.

34. An intravascular stent, comprising:
a first polymeric coil with a first helix angle; and
a second metallic coil with a second helix angle attached to the first coil.

35. The stent of claim 34, wherein the metallic coil is disposed around the polymeric coil.

36. The stent of claim 34, wherein the polymeric coil is disposed around the metallic coil.

37. The stent of claim 34, wherein the first helix angle is equal to the second helix angle.

38. The stent of claim 34, wherein the first helix angle is equal to the negative value of the second helix angle.

39. The stent of claim 34, wherein the first coil is longitudinally offset from the second coil.

40. The stent of claim 34, wherein the second coil is formed with a plurality of undulations comprising peaks and valleys.

41. The stent of claim 34, wherein the second coil is bonded with the first coil.

42. An intravascular stent, comprising:

a plurality of cylindrical rings having inner surfaces and outer surfaces and aligned along a longitudinal axis of the stent;

a plurality of polymeric wires aligned along a longitudinal axis of the stent and attached to the cylindrical rings.

43. The stent of claim 42, wherein the plurality of wires are disposed along the inner surface of the cylindrical rings.

44. The stent of claim 42, wherein the plurality of wires are disposed along the outer surface of the cylindrical rings.

45. The stent of claim 42, wherein the cylindrical rings have a plurality of undulations comprising peaks and valleys.

46. The stent of claim 42, wherein the plurality of wires are bonded to the cylindrical rings.

47. The stent of claim 42, wherein the cylindrical rings are comprised of a metallic material.

48. The stent of claim 42, wherein the plurality of wires have undulations having peaks and valleys.

49. The stent of claim 42, wherein the plurality of wires comprise two or more wires.

50. An intravascular stent, comprising:

a plurality of metallic cylindrical rings aligned along a longitudinal axis of the stent; and

a plurality of polymeric links connecting the cylindrical rings along the longitudinal axis.

51. The stent of claim 50, wherein the polymeric links are interspersed between adjacent cylindrical rings.

52. The stent of claim 50, wherein a plurality of polymeric links are connected across three adjacent cylindrical rings.

53. The stent of claim 50, wherein the cylindrical rings have undulations including peaks and valleys.

54. The stent of claim 53, wherein the peaks of each cylindrical ring are axially aligned with the valleys of each adjacent cylindrical ring.

55. The stent of claim 54, wherein at least four links are positioned between respective peaks and valleys of a plurality of adjacent cylindrical rings.

56. The stent of claim 53, wherein the peaks of each cylindrical ring are axially aligned with the peaks of each adjacent cylindrical ring.

57. The stent of claim 56, wherein at least two links are positioned between respective peaks of a plurality of adjacent cylindrical rings.

58. The stent of claim 50, wherein the links have proximal ends with a first circumferential width, distal ends with a second circumferential width, and center sections with a third circumferential width.

59. The stent of claim 58, wherein the third circumferential width of the center section is greater than the first circumferential width of the proximal end and greater than the second circumferential width of the distal end of the link.

60. The stent of claim 58, wherein the third circumferential width of the center section is at least two times the first circumferential width of the proximal end and at least two times the second circumferential width of the distal end of the link.

61. The stent of claim 50, wherein at least some of the plurality of links have a first durometer polymer and at least some of the plurality of links have a second durometer polymer.

62. The stent of claim 50, wherein a plurality of polymeric links include links having a durometer in the range of 1A to 99A.

63. The stent of claim 50, wherein a plurality of links are comprised of a first frictional polymer and a plurality of links are comprised of a second frictional polymer.

64. The stent of claim 50, wherein a plurality of links include a plurality of polymers with coefficients of friction ranging from 0.1 to 0.9.

65. The stent of claim 50, wherein at least some of the links have a first thickness polymer and at least some of the links have a second thickness polymer.

66. The stent of claim 50, wherein a plurality of links have a plurality of polymers ranging from 0.001 to 0.010 inch in radial thickness.

67. A method for forming an intravascular stent, comprising:

forming a polymeric coil with an inner surface and an outer surface;

forming a plurality of metallic cylindrical rings having undulations comprising a plurality of peaks and valleys; and

attaching the plurality of rings to the coil.

68. The method of claim 67, wherein attaching the plurality of rings includes attaching the rings to the inner surface of the coil.

69. The method of claim 67, wherein attaching the plurality of rings includes attaching the rings to the outer surface of the coil.

70. A method for forming an intravascular stent, comprising:

forming a first polymeric coil with an inner and outer surface;

forming a second metallic coil having undulations comprising a plurality of peaks and valleys; and

attaching the second metallic coil to the first polymeric coil.

71. The method of claim 70, wherein attaching the second metallic coil includes attaching the metallic coil to the inner surface of the polymeric coil.

72. The method of claim 70, wherein attaching the second metallic coil includes attaching the metallic coil to the outer surface of the polymeric coil.

73. A method for forming an intravascular stent, comprising:

forming a plurality of metallic cylindrical rings having undulations comprising a plurality of peaks and valleys;

forming a plurality of polymeric links; and

attaching the polymeric links between adjacent cylindrical rings.

74. A method for forming an intravascular stent, comprising:

means for forming a polymeric coil with an outer surface;

means for forming a plurality of metallic cylindrical rings having undulations comprising a plurality of peaks and valleys;

means for attaching the cylindrical rings to the outer surface of the coil.

75. The method of claim 74, wherein the means for forming a polymeric coil comprise molding the coil in an injection molding apparatus.

76. The method of claim 74, wherein the means for forming a plurality of metallic cylindrical rings comprise laser cutting the rings.

77. The method of claim 74, wherein the means for attaching the cylindrical rings to the outer surface of the coil comprise bonding the rings to the coil with a bonding agent.

78. A method of crimping a stent with cylindrical rings disposed around a coil section onto a balloon catheter, comprising:

providing a tool for crimping the stent onto the balloon portion of a catheter;

inserting the stent and balloon catheter into the crimping tool; and

crimping the cylindrical rings of the stent;

whereby the stent is removably secured to the balloon portion of the catheter.

79. A method for delivering through and implanting a stent in a body lumen, comprising:

providing a stent comprising a polymeric coil and a plurality of metallic cylindrical rings;

providing a delivery system having a distal end and proximal end;

mounting the stent on the distal end of the delivery system;

advancing the stent through the vascular system to the body lumen;

expanding and implanting the stent; and

removing the delivery system from the body lumen.